InterMed: An Internet-Based Medical Collaboratory

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InterMed is a collaborative research effort among academic medical informatics laboratories. The overall emphasis of the collaboration is to share existing medical resources contributed by different sites, to build new systems that can be shared, and to experiment with methods of collaboration over the Internet.

The InterMed group has been collaborating on a variety of projects to fulfill the goal of sharing resources and jointly working on the creation of new resources. In this demonstration, we will show applications from some of the projects described below.

1) Vocabulary Server Design and Development

An important barrier to sharing computer-based medical resources is the lack of a standard medical vocabulary. We are investigating design and development of a vocabulary server that would permit widespread access to a shared vocabulary if such a standard were to become available. Due to the rapid growth of the Internet and the World Wide Web, we have chosen to work with a Web-based interface to such a server.

This project is a joint effort by all of the institutions in the InterMed collaboratory. Columbia brings particular expertise in the area of medical content via their work on the Medical Entities Dictionary (MED). Stanford has had a long-standing interest in knowledge-based systems and frame-representation languages. Thus, Columbia is taking the lead in content development, and Stanford is assuming the task of tool development for the vocabulary server using a frame-based system.

2) Vocabulary Support for Clinical Guidelines

Clinical guideline decision-support systems often use controlled vocabularies and classification hierarchies. We are developing links between guideline systems at various sites and the vocabulary server. Guidelines we are working with include AIDS clinical trials and national guidelines for hyperlipidemia and urinary incontinence.

3) Concept Selection for Clinical Data Entry

Massachusetts General Hospital (MGH) is developing an electronic medical record that uses a locally-stored vocabulary. Through InterMed collaboration, we are experimenting with ways to support their local needs by direct access to a vocabulary server on the Internet.

4) Form-Based Data Entry

InterMed participants from Brigham and Women's Hospital are developing a structured format for recording data in a chest X-ray report. We are incorporating this type of knowledge in our server and experimenting with ways of accessing it over the Internet to support form-based data entry.

5) WebDXplain and WebMedline

WebDXplain is a collaborative activity between MGH and Stanford. MGH has provided the diagnostic expert system, DXplain, and Stanford has built a Web interface. Stanford has also built Web access to Medline, which is being used for research purposes in the electronic medical record at Columbia.

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